

Why Soy Succeeded

Austria in Its Transnational Setting, 1950–2020

Abstract: This article explores the driving and impeding forces behind the rise of soy as feed, food, and arable crop in Austria between around 1950 and 2020. Drawing on the food regime approach, transition theory, and commodity chain analysis, it investigates the formation of soy networks in Austria and their transnational connections. Using qualitative and quantitative data, it illustrates three periods: *hidden beans* (1948–1973), *contested beans* (1973–1995), and *flexible beans* (1995–2020). In the 1950s and 1960s, introducing soy cake as animal feed marked Austria's integration into the US-centred regime. During the 1970s and 1980s, several attempts to establish domestic soy cultivation denoted a shift towards a more nationally framed food regime. From the 1990s to the 2010s, a new wave of globalization, Europeanization, and regionalization of soy (GM-free and organic seeds) occurred. Austria became part of the dominant WTO-centred regime as well as the emerging EU-centred regime, combining domestic production and international trade in flexible ways. Key factors behind the Austrian soy expansion include state actions, international agreements, initiatives by business and civil society, and broader nutritional and ecological questions. The article's empirical evidence contributes to theoretical debates on food regimes with regard to transitional periods and multiscale structures.

Zusammenfassung: Dieser Artikel untersucht die treibenden und hemmenden Kräfte hinter dem Aufstieg der Sojabohne als Futter- und Lebensmittel sowie Ackerkulturlpflanze in Österreich zwischen etwa 1950 und 2020. Die Herausbildung von Soja-Netzwerken in Österreich und deren transnationalen Verflechtungen werden unter Bezugnahme auf den Food Regime-Ansatz, Transition Theory und die Analyse von Warenketten untersucht. Anhand qualitativer und quantitativer Daten werden drei Phasen in der Entwicklung des Sojaanbaus herausgearbeitet: „versteckte Bohnen“ (1948–1973), „umstrittene Bohnen“ (1973–1995) und „flexible Bohnen“ (1995–2020). In den 1950er und 1960er Jahren markierte die Einführung von Sojakuchen als Tierfutter die Integration Österreichs in das US-zentrierte Regime. In den 1970er und 1980er Jahren deuteten mehrere Versuche, einen heimischen Sojaanbau zu etablieren, auf ein stärker national geprägtes Nahrungsregime hin. Die Zeit von den 1990er bis zu den 2010er Jahren war von einer neuen Welle der Globalisierung, Europäisierung und Regionalisierung von Soja (GVO-freies und Bio-Saatgut) geprägt. Österreich wurde sowohl Teil des dominanten WTO-zentrierten als auch des aufkommenden EU-zentrierten Regimes und verband dabei heimische Produktion und internationalen Handel auf flexible Weise. Zu den Schlüsselfaktoren hinter der österreichischen Sojaexpansion zählen staatliche Maßnahmen, internationale Abkommen, Initiativen aus Wirtschaft und Zivilgesellschaft sowie übergeordnete ernährungsbezogene und

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ökologische Fragen. Die empirischen Befunde des Artikels leisten einen Beitrag zu theoretischen Debatten über Nahrungsregime mit einem Fokus auf Übergangsphasen und multiskalare Strukturen.

Keywords: Austria, soybean, oilseed, food regime, transition, cultivation

Introduction

This article traces agro-food change through the lens of soy in Austria, from the abandonment of domestic soy cultivation and its introduction as imported animal feed after the mid-twentieth century to its establishment as a significant arable crop with multiple uses in the twenty-first century. It tells the story of soy's transition from an exclusively imported commodity to domestic production and differentiated consumption.¹ This was not a linear development but rather a long and challenging journey with ruptures and setbacks. The 'success' of soy is understood here in analytical rather than normative terms; that is, as the emergence and consolidation of domestic and transnational relations constituting a relatively stable commodity network, along with the associated set of institutionalized rules. These relationships are indicative of soy being integrated into food regime mechanisms. This applies to the entire commodity chain of production, processing, and trade as well as consumption as feed, food, or for other purposes. However, soy has not been completely integrated into all facets of the food regime – nor was this integration uncontested. For this reason, this article focuses on the emergence of a partially integrated and contested domestic soy cultivation.

It builds on the food regime approach, highlighting stable periods of capital accumulation and regulation of agriculture and food.² However, this structuralist concept is complemented with transition theory to emphasize the multi-actor interplay of top-down and bottom-up dynamics in regime crises and transitions, as well as with interdisciplinary commodity studies. Taken together, these three perspectives illuminate the emergence of the soy commodity network, including its human and non-human actors.³ For the period under study, the formation of the US-centred regime (1950s–1970s) as well as the following crisis and transition to a more multipolar food regime (1990s–2010s), sometimes referred to as 'WTO-centred' or 'corporate', are of interest.⁴ The article thus contributes to the refinement of the food regime approach in terms of spatiality (from global to national) and temporality (from stable phases to transitions). In particular, it engages in the ongoing controversy in food regime scholarship

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- 1 The soybean is a leguminous plant whose beans contain protein (around 37 per cent), oil (around 20 per cent), and other components such as isoflavones. This versatility translates into a wide range of products including soy cake, flour, and oil. The term 'soy' is used in this article to refer to the plant as well as the products derived from it.
 - 2 Harriet Friedmann/Philip McMichael, *Agriculture and The State System: The Rise and Decline of National Agricultures, 1870 to the Present*, in: *Sociologia Ruralis* 29/2 (1989), 93–117.
 - 3 These theoretical concepts provide a framework for exploring the history of capitalism through the lens of a specific commodity, explaining the techno-scientific, economic, and political dynamics of agro-food changes from local to global. See Ernst Langthaler/Maximilian Martsch/Gabriel Tober, *Conceptualizing Historical Commodity Studies: The Case of Soy*, in: Juan Carmona-Zabala (ed.), *Commodities in History: Theoretical Reflections and Empirical Case Studies*, Crete 2023.
 - 4 Philip McMichael, *Global Development and the Corporate Food Regime*, in: Frederick Buttel/Philip McMichael (eds.), *New Directions in the Sociology of Global Development*, Amsterdam/London 2005, 265–299, 273.

about the (non-)existence of a third food regime after its first (British-centred) and second (US-centred predecessors), along with the modality of food regime transitions.⁵

My analysis is based on four types of sources: expert interviews, contemporary literature, foreign trade statistics, and archival material. The latter consists mainly of files from the Austrian State Archives (ÖSTA), the Provincial Archive of Lower Austria (NÖLA), the Parliamentary Archives (ParA), and the Kreisky Archive (StBKA). The interviews were conducted between 2022 and 2024 with Austrian soy pioneers and other relevant actors in the field, and primarily cover the period from the 1980s onwards. To reconstruct the emergence of soy in Austria, I analyse key commodity networks, regulatory institutions, and transfers of knowledge and technology from around 1950 to 2020, covering the political, economic, and societal reconstruction after the Second World War up to the recent polycrisis escalated by the Covid-19 pandemic. This large timeframe is divided into periods that can be defined on the basis of economic cycles and political shifts.⁶

In the main part of the article, I explore the driving and impeding forces affecting the formation of a soy commodity network in Austria. I argue that the rise of soy was mainly driven by political, economic, and civil society forces. To trace the changing configurations in the adoption of soy, I distinguish between three periods: The first period (1948–1973) covers the postwar reconstruction focused on supplying the population with basic foodstuffs and increasing the level of agricultural self-sufficiency. Agricultural productivity grew through intensification, with imports of protein-rich soy cake as animal feed for livestock production within the US-centred food regime playing an important role.⁷ In the 1960s, Austria shifted from undersupply to structural agricultural surpluses. The 1973 protein crisis initiated the descent of the preceding regime and its gradual transition to a different regime. The second period (1973–1995) saw various state- and business-initiated efforts to reduce dependence on protein and vegetable oil imports. During the 1970s and 1980s, agricultural policy by a series of social democratic governments in conjunction with initiatives by agrobusiness firms aimed to establish domestic oilseed production. Following the return of the conservative party to government as a coalition partner in 1987, so-called eco-social policies including organic farming and subsidies for alternative crops gained ground, leading to an initial soy cultivation boom.⁸ Austria's accession to the European Union (EU) in 1995 marks the beginning of the third period characterized by the stabilization of a different food regime. Austria's current position is distinguished by the coexistence of imports and exports, with soy representing a diversified and flexible product satisfying various demands.

5 André Magnan, Food Regimes, in: Jeffrey Pilcher (ed.), *The Oxford Handbook of Food History*, New York 2012, 370–388, 381–383.

6 The periodization should not be understood as clear-cut demarcations, but rather as overlapping periods that share certain events and developments.

7 In this article, oilcake refers to protein-rich products from oil mills and oil extraction (extraction meal, press cake, and other residues). Oilcake is the main category. The type of oilseed (e.g. soybean, rapeseed, sunflower) defines specific sub-categories of oilcake (e.g. soy cake).

8 Gerhard Hovorka/Josef Hoppichler, Agrarpolitik, in: Herbert Dachs et al. (eds.), *Politik in Österreich: Das Handbuch*, Vienna 2006, 701–710, 703–704; Ernst Hanisch, Die Politik und die Landwirtschaft, in: Franz Ledermüller (ed.), *Geschichte der österreichischen Land- und Forstwirtschaft im 20. Jahrhundert: Politik, Gesellschaft, Wirtschaft*, Vienna 2002, 15–189, 161.

Hidden beans: Austrian soy under the US-centred regime (1948–1973)

In the period after the Second World War, Austria became integrated in the emerging US-centred hegemony in the agro-food domain. The developing postwar order emphasized national food security as the key political and economic concern. Both domestic production and trade, including food aid, served this purpose. After the end of the war, cultivation of soy in Austria was initially promoted as a possible contribution to easing the dramatic food shortage, but it soon turned out to be unsuitable.⁹ According to Friedrich Drahorad, a leading Austrian soybean breeder during and after the Second World War, it was

“clearly visible that despite local successes in soybean cultivation, its general incorporation as an agricultural crop in Austria was probably out of the question. The reported successes are not real in economic terms and can be explained by the lack of raw materials at the time and the price support via public funds.”¹⁰

Domestic soy cultivation declined due to unsuited varieties and increasing international dominance. Following a brief revival immediately after the war, the area planted with soybeans declined steadily. By the 1950s, soy breeding and cultivation no longer played a role in Austrian agriculture (Figure 1).

Despite not being locally grown, soy entered the Austrian agro-food sector in two forms: soy oil as a fat-rich food supply and soy cake as protein-rich animal feed. Direct imports of manufactured goods and foodstuffs were key means to stabilize basic supplies after the war. In the European Recovery Program (ERP, also known as the Marshall Plan) of 1948/49–1951/52, the US government aimed to boost Austrian agricultural production from 55 to 75 per cent of domestic demand. This increase was to be achieved by “greater use of fertilizer; use of higher quality seeds; the reestablishment and development of indigenous seed-growing plants; imports of animal feeds; increased mechanization; and the rationalization of agricultural holdings.”¹¹ The technological intensification and state regulation of agriculture thus aimed at increasing self-sufficiency and securing the food supply for the Austrian population by importing feed for the livestock sector.

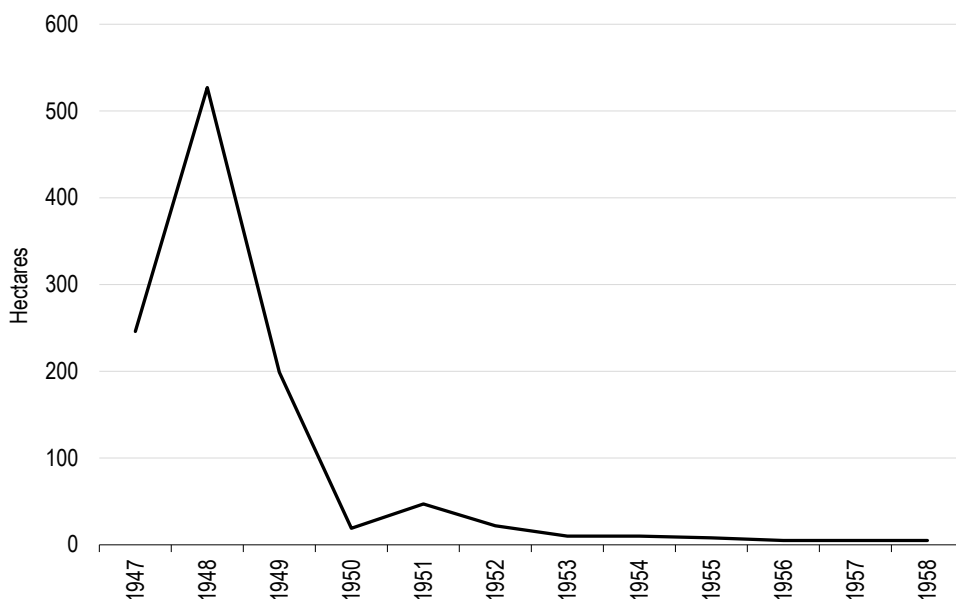
Imports of soy cake began in 1948 under the ERP with 1,288 tonnes. However, during the ERP period, soy cake accounted for only a small proportion of the total oilcake imports for feed (between 2 and 32 per cent). Other important products were peanut, coconut, linseed, and sesame oilcake. It was not until the late 1950s that soy cake increased in importance compared to other oilcakes (Figure 2). Initially, direct and indirect imports of soy cake came from

9 Franz Anton Brillmayer, *Die Bedeutung der Soja für die Ernährung Österreichs*, Vienna 1947; Franz Anton Brillmayer, *Die Kultur der Soja in Österreich*, Vienna 1947.

10 Friedrich Drahorad, *Phänologische und morphologische Beobachtungen an Soja hispida Moench: Ein Beitrag zur Frage des Anbaues und der Akklimatisation in Österreich*, in: *Die Bodenkultur* 6: Sonderheft (1955), 71–91, 89. This and all further translations of quotes from interviews and other sources into English are by the author.

11 Economic Cooperation Administration, *Austria: Country Study. European Recovery Program (ERP)*, Washington, D.C. 1949, 44.

Figure 1: Soybean cultivation in Austria after the Second World War, 1947–1958



Source: Österreichisches statistisches Zentralamt, Bodennutzungserhebung, in: Statistische Nachrichten, years 1947–1958, Vienna. Compiled by the author.

different countries including the USA, Argentina, Brazil, Yugoslavia, Italy, and the Federal Republic of Germany.¹²

The share of food aid was significant. Between 1948 and 1950, food imports within the ERP framework amounted to \$198 million, compared with \$134 million for manufactured goods.¹³ These deliveries accounted for over 20 per cent of the total value of goods and services imported during these years.¹⁴ In particular, bread, cereals, fats, and oils – together accounting for more than 80 per cent of all foodstuffs – were imported as food aid.¹⁵ A closer look at 1948, the first year of the ERP, reveals that some 28,600 tonnes of edible oils and fats came to Austria as aid, with soy oil from the United States accounting for 5,183 tonnes. Although wheat and wheat flour made up the bulk of the shipments (almost 70 per cent of the total), the 8,348 tonnes of soy flour delivered from the United States were a significant figure.¹⁶ The

12 Österreichisches statistisches Zentralamt, Statistik des Außenhandels Österreichs, yearbooks 1948–1960, Customs No. 1399/555, 2304. Due to the source data, only direct imports are considered in this article. It should be noted that certain countries of origin (e.g., Germany, the Netherlands, or Denmark) are not soybean-producing countries but instead act as intermediaries (re-exporters) or first processors of soybeans. Austrian exports may also include products that have been imported and subsequently re-exported, known as re-exported imports.

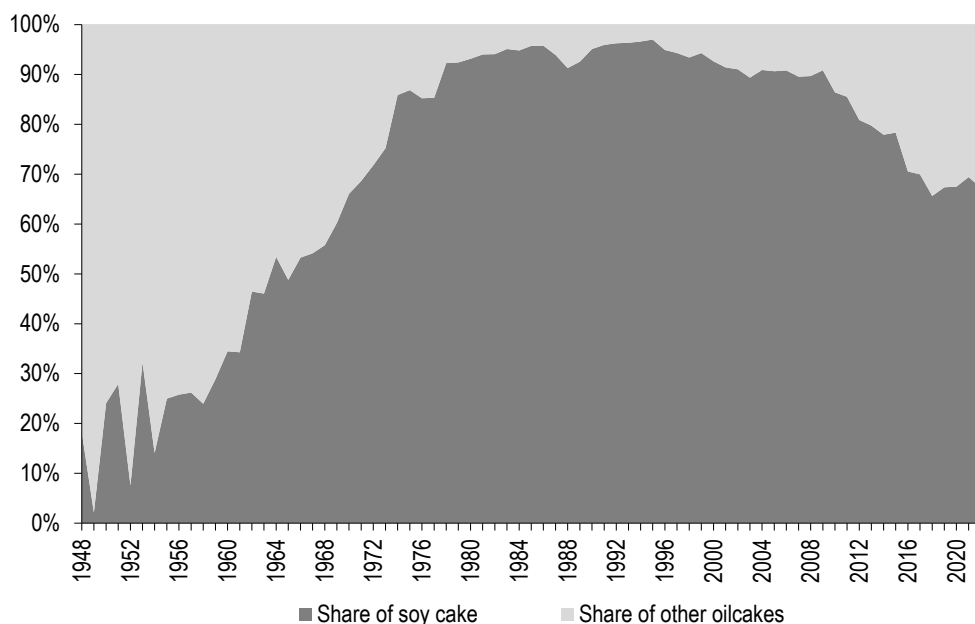
13 Hannes Hofbauer, Westwärts: Österreichs Wirtschaft im Wiederaufbau, Vienna 1992, 151.

14 Hans Seidel, Österreichs Wirtschaft und Wirtschaftspolitik nach dem Zweiten Weltkrieg, Vienna 2005, 306.

15 Österreich und der Marshall-Plan: Eine Zusammenstellung der wichtigsten Dokumente des europäischen Wiederaufbauprogrammes, Mit einer Gesamtdarstellung der Marshall-Plan-Hilfe in Österreich, Vienna 1950, 123.

16 Österreichisches statistisches Zentralamt, Die Hilfslieferungen an Nahrungsmitteln im Jahre 1948, in: Statistische Nachrichten, Vienna 1949, 151–152.

Figure 2: Share of soy cake in total oilcake imports in Austria, 1948–2022



Sources: Österreichisches statistisches Zentralamt, Statistik des Außenhandels Österreichs, yearbooks 1948–1994, Customs No. 1399, 2304, 2305, 2306; Statistik Austria, Statcube, years 1995–2022, 2304, Combined Nomenclature: 2305, 230650, 230620, 230630, 230610, 230660, 230690. Compiled by the author.

Other oilcakes refers to oilcakes made from peanuts, coconuts, pumpkin seeds, linseeds, rapeseeds, sesame seeds, sunflower seeds, cottonseeds, and palm nuts.

quantity of imported soy oil increased throughout the duration of the ERP, reaching around 7,000 tonnes in 1953. The countries of origin for soy oil included the USA as well as the Netherlands, the Federal Republic of Germany, and Belgium.¹⁷

These data indicate that the ERP laid the foundations for long-term transcontinental commodity chains for soy oil and soy cake. For the first time, the ERP linked (American) soybean producers, international and domestic traders and processing companies, and Austrian consumers. The federal government regulated and supported the import of soy oil to alleviate the shortage of edible oils and fats. As part of the ERP, it organized calls for offers for certain volumes, to be decided upon by an award commission. The resulting offers show how Austrian importers interacted with American and international trading and processing companies to submit suitable proposals. The successful bidders imported soy oil and other ERP goods to Austria via the port of Trieste in Italy as well as by rail. Distribution and consumer prices in

17 Österreichisches statistisches Zentralamt, Statistik, yearbooks 1948–1958, Customs No. 160 e/75, 179/83.

the country were regulated by the Austrian government. The soy oil went to processing plants in the soap, oil, and margarine industries, where it was turned into marketable products.¹⁸

The procedure for soy cake was similar, except that no further processing was carried out in Austria and the products were sent directly to the farmers via so-called receiving stations, i.e. warehouses and national traders.¹⁹ An interviewee from an agricultural trading company recalled the process as follows: “We have had soy cake since the 1950s [...]. It used to come in sacks. It arrived in sacks, in railway wagons [...] And then it went by truck, in sacks, to the farms. To the warehouses and us.”²⁰ This underlines that the ERP directly linked Austrian agriculture to the US-centred agricultural trade network. Even if the quantities of soy cake were relatively small at first, it shows the formation of an initial soy commodity chain. The need for exports of agricultural surpluses on the supply side and imports of food and feed on the demand side, supported by the US and Austrian governments, connected the Austrian agro-food sector to the US-centred regime via flows of soy cake and oil.

From the 1950s onwards, imports of animal feed for livestock production enabled both the intensification of agricultural production and a shift towards a more animal-based diet (meat, milk, eggs) in the context of economic growth. This contributed to the decoupling of animal production from domestic agricultural land, as well as to sectoral and spatial specialization.²¹ Trade policy also played a key role in this development. Austria’s accession to the General Agreement on Tariffs and Trade (GATT) in 1951 led to deeper integration with the US-centred regime.²² In the course of the Kennedy Round (1964–1967) of GATT negotiations, Austria made a binding commitment to duty-free treatment for oilcake in return for US concessions involving reduced duties on cheese, ski equipment, and gemstones. This decision was also supported by interest groups such as the Chamber of Agriculture and the Chamber of Commerce.²³ However, a low tariff of 12 per cent was imposed on soy oil.²⁴

Soy oil and soy cake continued to be imported after the end of the ERP. In the case of soy cake, import volumes remained stable in the 1950s and only began to increase in the 1960s. While annual imports amounted to around 15,344 tonnes in 1960, they reached the 50,000 tonne mark in 1966 and grew to just under 100,000 tonnes in 1970. During this period, the USA emerged as a direct supplier, steadily increasing its share until 1972. The Federal Republic of Germany supplied an increasing quantity starting in 1953, with a sharp rise in the 1970s. Small quantities were also imported from the Netherlands. Meanwhile, direct imports from Brazil and Argentina played no role (Figure 3). The trend for soy oil was different, however: Imports increased until 1960, then declined until 1969. The main exporting

18 Österreichisches Staatsarchiv (ÖSTA), Archiv der Republik (AdR), GZ: 652.886-ERP 5/51, ECA-Autorisation 31-0504-00-3547.

19 ÖSTA, AdR, GZ: 751.022-ERP 5/52, ZL 80.341-III/8/51.

20 Interview no. 28/2, segment 36 (male, agricultural trading company), 16 November 2023.

21 Norbert Ortmayr, Überschusskrisen in der europäischen Landwirtschaft: Österreich 1970–1994 als Fallbeispiel, in: *zeitgeschichte* 34/3 (2007), 162–178, 165–168.

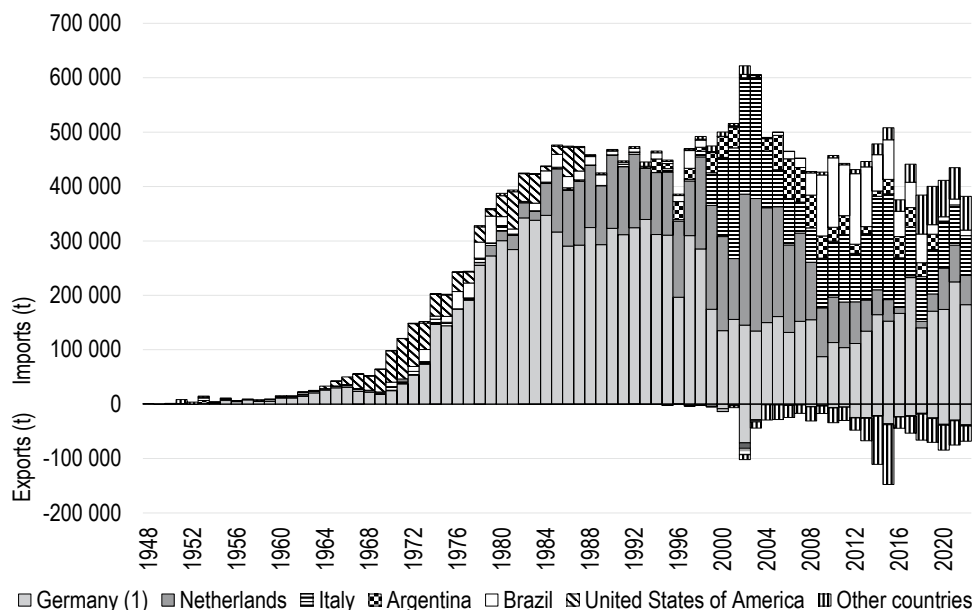
22 Due to a veto by the Soviet Union, Austria’s accession did not take effect until 1955.

23 Kreisky-Archiv (StBKA), shelfmark VI.1, box 61: Landwirtschaftliche Spezialprobleme. Ölkuchen Importabgabe. Informationen für den Bundesminister, 8 January 1969, ZL: 77.658-I/68; Walter Tausch, Sind die Alternativen Alternativen?, in: Gerhard Steger (ed.), *Grünbuch: Krise und Perspektiven der österreichischen Landwirtschaft*, Vienna 1988, 192–199, 193.

24 GATT, Results of Negotiations under Article XXVIII for the Modification, or Withdrawal of Concessions in the Schedule of Austria Initially Negotiated with the United States of America, Geneva 19 September 1955, 10.

countries were the USA, Germany, the Netherlands, Denmark, and Hungary.²⁵ This means that Austria's integration into the US-centred regime occurred primarily via trade in soy cake and only secondarily via soy oil trading, both initiated by the ERP but only reaching significance in the 1960s. In this respect, the ERP acted as a door opener allowing the US to seize its opportunity by introducing soy to Austrian farmers, creating demand, and selling in significant quantities. During this period, soy occupied a hidden but nonetheless relevant position in the Austrian agro-food sector.

Figure 3: Soy cake trade in Austria, 1948–2022



Sources: Österreichisches statistisches Zentralamt, Statistik, yearbooks 1948–1994, Customs No. 1399/555, 2304; Statistik Austria, Statcube, years 1995–2022, Combined Nomenclature: 2304. Compiled by the author.

(1) Until 1991: West and East Germany.

Contested beans: Austrian soy in the regime crisis and transition (1973–1995)

In the second period, the established commodity network of feed imports entered a crisis, as a result of which the cultivation and processing of soy and other oil and protein crops within Austria became a hotly contested solution. The instability of the oil and protein supply pro-

25 Österreichisches statistisches Zentralamt, Statistik, yearbooks 1948–1970, Customs No. 160 e/75, 179/83, 150787, 150737, 150797.

vided via imports triggered political and economic reactions to deal with its consequences. Three successive efforts to develop domestic oilseed production and processing emerged during this period: a political planning project by the social democratic government, a civil society and economic niche development, and a political undertaking within the framework of eco-social policy by the coalition of social democrats and conservatives.

The Oilseed Project (1973–1981)

From the end of the 1960s, contradicting effects of economic growth began to be felt in Austria. In the agro-food sector, a transition from shortages to surpluses became evident. During the 1960s, surpluses began to appear in the dairy and livestock (cattle) sectors, which were sold abroad. By the mid-1970s, cereal production had also reached a level that surpassed domestic consumption. Over time, these grain surpluses could also be exported.²⁶ By contrast, the demand for protein feed – particularly soy cake – continued to grow in the 1970s (Figure 3). A global shortage of protein feedstuffs, especially fishmeal from Peru and soy from the US, further exacerbated by a one-week US export embargo on soy in June 1973, drove up prices.²⁷ This period of scarcity was framed by contemporaries as a ‘protein crisis.’²⁸ Political decision-makers in Austria interpreted the protein shortage as a twofold problem: On the one hand, the country was dependent on foreign deliveries of vegetable oils and protein feed. On the other hand, Austria produced agricultural surpluses in other areas, which were exported with state support and thus burdened the federal budget.²⁹

Political debates about oilcake imports had begun at the end of the 1960s, before the protein crisis. In fact, as early as 1958, the National Assembly had passed a federal law allowing the Ministry of Finance (BMF) to impose licence fees on the import of protein feed (including oilcake). In the event of surplus milk production, imported protein feed used for milk production would be taxed, with the generated revenue used to promote milk sales.³⁰ In 1968, the BMF issued such an executive order for oilcake.³¹ In the subsequent GATT consultations, the US announced retaliatory measures against Austrian products (cheese, fruit juices, wine, clothing).³² Following this objection, the Austrian authorities decided to withdraw the order.³³

26 Ortmayr, Überschusskrisen, 163; Alois Posch, Österreichs Landwirtschaft – von der Unter- zur Überversorgung, in: Steger (ed.), Grünbuch, 31–43, 33.

27 Matthew Roth, *Magic Bean: The Rise of Soy in America*, Lawrence 2018, 196–199.

28 Gerhard Rupp, *Weltweite Futtereweißkrise*, in: *Agrarische Rundschau* 2 (1973), 27–28.

29 BMLE, *Grüner Bericht 1973: Bericht über die Situation der österreichischen Land- und Forstwirtschaft*, Vienna 1973, 12.

30 Bundesgesetz über die Einhebung einer Lizenzabgabe anlässlich der Einfuhr bestimmter eiweißhaltiger Futtermittel vom 16. Dezember 1958, *Bundesgesetzblatt (BGBl)* 283/1958.

31 Verordnung des Bundesministeriums für Finanzen über die Einhebung einer Lizenzabgabe anlässlich der Einfuhr von Waren der Zolltarif-Nummer 23.04 vom 26. Juni 1968, *BGBl* 252/1968.

32 GATT, Article XIX – Austria: Action on Oilcakes. Retaliatory Measures by the United States, L/3046/Add.1, 20 November 1968.

33 GATT, Article XIX – Austria: Action on Oilcakes. Restoration of Concession, L/3046/Add.3, 24.12.1968; Verordnung des Bundesministeriums für Finanzen vom 20. Jänner 1969, mit der die Verordnung vom 26. Juni 1968, *BGBl* Nr. 252, über die Einhebung einer Lizenzabgabe anlässlich der Einfuhr von Waren der Zolltarif-Nummer 23.04 aufgehoben wird, *BGBl* 40/1969.

In addition, this so-called ‘action on oilcakes’ led to an important agreement between the USA and Austria: The conservative government promised not to introduce a domestic consumption tax or similar measures for oilcakes in the future.³⁴ The attempt to defend Austria’s autonomy in trade policy thus failed due to the hegemonic position of the USA in the food regime. This would shape developments in the years that followed.

During the protein crisis of 1973, the Austrian government debated stockpiling oilseeds, animal by-products, and protein feeds such as fishmeal and soy cake to ensure short-term food security.³⁵ Domestic production of oil and protein crops was also discussed as a means of securing oil and protein supplies in the longer term. According to the Minister of Agriculture, Oskar Weihs, it was necessary to make cultivation more attractive for producers, establish a permanent processing facility, and ensure that local products (fat, oil and oilcake) were competitive with imported goods.³⁶ These three aspects formed the cornerstones of a diffuse state-led ‘Oilseed Project’ involving actors from different sectors.

Renewed interest in oilseed and protein crops including soy led public and private agricultural research institutions to address related cultivation and breeding questions. The University of Natural Resources and Life Sciences (BOKU) established a soy research programme as early as 1969. Mutation breeding was initiated to establish the soybean as a legume in crop rotation.³⁷ The introduction of soy as a crop in Austria faced many challenges, however, with scholars identifying three main problems in 1976: Firstly, it was difficult to find suitable varieties due to Austria’s short growing season and climate. Trialling varieties thus became a crucial step in scientific research. For the BOKU studies, around 150 genetic lines from nine countries were tested. The second challenge was the yearly variation in yield per hectare: Growing soy was only profitable for producers if they could achieve both high and stable yields. Lastly, the seed quality of the selected varieties needed to be high to meet industrial and legal requirements in Austria.³⁸ In the 1970s, BOKU researchers carried out further investigations on aspects including the photoperiodic behaviour of soy plants, the cold tolerance of soybeans, and weed control in soybean cultivation. These studies reflect that university research was coordinated with government institutions and breeding companies and even received state funding.³⁹

34 StBKA, shelfmark VI.1, box 61: Landwirtschaftliche Spezialprobleme, Österreich Beschluß bezüglich Ölkuchen. Beratung zwischen Österreich und den Vereinigten Staaten, 22 January 1969, L/3046/Add.4.

35 StBKA, Josef Staribacher Diaries. Digital edition, 22 November 1973, 18-1307–18-1309.

36 Parlamentsarchiv (ParA), Beantwortung der schriftlichen parlamentarischen Anfrage 1420/J betreffend Eiweißfuttermittelmarkt, 1328/AB, Beilagen zu den stenographischen Protokollen des Nationalrates, 27 July 1973, scanned original.

37 Ralph Gretzmacher, Sojaanbau in Österreich?, in: *Agrarische Rundschau* 1 (1974), 55–58.

38 Ralph Gretzmacher/Laila Tanasch, Research Notes. Soybean Breeding in Austria, in: *Soybean Genetics Newsletter* 3 (1976), 7–11.

39 Peter Liebhard, Untersuchungen über den Einfluß der Tageslänge und der Temperatur auf Wachstum und Entwicklung verschiedener Sojabohnensorten im Freiland und unter kontrollierbaren Klimabedingungen, doctoral thesis, University of Natural Resources and Life Sciences, Vienna 1979; Herbert Oberecker, Untersuchung über Keimung bei tiefen Temperaturen sowie der Frostresistenz bei Sojabohnen als Grundlage für eine Auslesemethode bei der Sojazüchtung, diploma thesis, University of Natural Resources and Life Sciences, Vienna 1976; Johann Glauninger, Unkrautbekämpfung in Sojabohne, doctoral thesis, University of Natural Resources and Life Sciences, Vienna 1978.

The Federal Institute for Plant Production and Seed Testing (BAP) was responsible for state-funded field trials and variety registration. It received a direct mandate from the Ministry of Agriculture and Forestry (BMLF) to deal with oil and protein crops. In 1974, the department for forage crops was expanded to include grain legumes and oilseeds, and it began testing soybeans in plot and large-scale trials. Two years later, these trials were integrated into the European Soybean Research Project of the Food and Agriculture Organization (FAO). This platform facilitated obtainment of seed varieties and the sharing of results with partners abroad.⁴⁰ In 1982, after eight years of research, department head Dietrich Wolffhardt concluded: "Trials with soybeans should not be ignored in the future, even if this crop is unlikely to become established in practical agriculture at the present time."⁴¹ While his research showed that soybean cultivation was possible in Austria, he delivered a negative outlook for extensive soy cultivation. Soybean variety testing continued after 1982, but on a smaller scale.

The Provincial Chambers of Agriculture (LWK) in eastern Austria, especially those of Lower Austria, Burgenland, Vienna and Styria, carried out state-sponsored large-scale cultivation trials advised by the BAP to gain practical experience. The LWK took on a mediating role between government agencies and farmers in promoting agricultural research and applied knowledge.⁴² The Chambers in Lower Austria and Burgenland ran large-scale cultivation trials between 1974 and 1976, but this first phase of trials produced unsatisfactory results with fluctuating yields and difficulties regarding weed control. In total, around 10 hectares of soy were tested each year. In 1977 and 1978, only the Styrian Chamber carried out trials on a small scale (Figure 4).

A twofold change occurred in 1979: Firstly, the LWK once again increased the number of trials performed on behalf of the BMLF. The government also offered incentives to growers by way of fixed prices and sales volumes. This arrangement lasted only a single year, however.⁴³ Secondly, *Sojaring*, the Austrian Soybean Farmers' Association, was founded in 1979 to establish and promote soybean cultivation in Austria.⁴⁴ Its pioneer, Anton Wolf, was a senior scientific advisor at the research department of the Central Institute for Meteorology and Geodynamics (ZAMG). He had been investigating the climatological conditions for soy cultivation in Austria since 1975.⁴⁵ Unlike Wolffhardt, he was convinced that soy cultivation not only could be established in the future but should be started immediately. As a producer organization, *Sojaring* concerned itself with the entire production chain from seed to harvest,

40 Bundesanstalt für Pflanzenbau (ed.), *Jahrbuch der Bundesanstalt für Pflanzenbau* 1984, Vienna 1985.

41 Dietrich Wolffhardt, *Anbauversuche mit Sojabohnen in Österreich*, in: *Fette, Seifen, Anstrichmittel* 84/3 (1982), 92–101, 101.

42 Interview no. 20, segment 7 (male, Chamber of Agriculture), 13 June 2023.

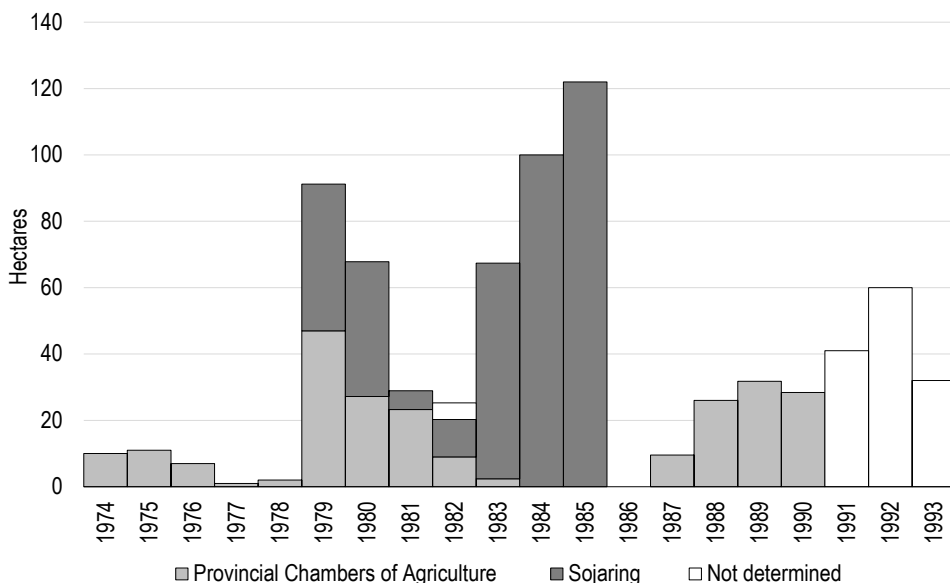
43 Österreichische Vereinigung für Agrarwissenschaftliche Forschung, *Bericht über Erfahrungen beim Anbau von Sojabohne (Glycine max) im Bundesland Niederösterreich*. Im Auftrag des Bundesministeriums für Wissenschaft und Forschung, Vienna 1981, 14–15.

44 An agricultural co-operative named *Sojaring* already existed during the Second World War and was dissolved in 1959. See *Zentralblatt für die Eintragungen in das Handelsregister der Republik Österreich* 58/50 (16 December 1959), 836.

45 Anton Wolf, *Vorläufige Ergebnisse klimatologischer Untersuchungen über den Sojaanbau in Österreich*, in: *Wetter und Leben: Zeitschrift für angewandte Meteorologie* 32/2 (1980), 88–92.

emphasizing knowledge generation and transfer.⁴⁶ As a scientist and representative of *Sojaring*, Wolf lobbied for soy and liaised with many political and economic actors.⁴⁷ *Sojaring*'s large-scale cultivation trials began in 1979 in cooperation with the BAP as advisory body and financed by the BMLF. The cooperation was suspended in 1981 and not resumed until 1982, however.⁴⁸ From 1979 to 1982, *Sojaring* complemented the trials directed by the LWK, and after 1982 became the central player in the soy trial programme (Figure 4, next subchapter).

Figure 4: Large-scale soybean cultivation trials by Provincial Chambers of Agriculture and *Sojaring*, 1974–1993



Sources: BMLF, Tätigkeitsbericht, years 1973–1990; BMLF, Grüner Bericht, years 1991–1993; ÖSTA, AdR, GZ 26.006/03/82 (1981), GZ 26.006/04/82 (1982), GZ 26.006/24/84 and GZ 26.006/26/84 (1983), GZ 26.006/31/85 (1984). Compiled by the author.

Alongside the cultivation trials, considerations regarding the processing of oilseeds began. The political decision-makers and scientific advisors realized that domestic cultivation of oil and protein plants needed to be combined with domestic processing (separation of their components in an oil mill or extraction plant), since there were no large processing plants for oilseeds in Austria at the time. Such plants existed in other European countries such as Switzerland or Germany, from where Austria imported both soy oil and soy cake

46 Zentrales Vereinsregister (ZVR) der Landespolizeidirektion Wien, ZVR-Zahl 727023127, legal records of *Sojaring*, 20.03.1979–27.01.2023.

47 Anton Wolf, Endbericht des Soja-Rohstoff-Forschungsprojektes 1980. Untersuchung über das Gedeihen von Sojabohnensorten in Abhängigkeit von naturräumlichen Faktoren, 1. Phase Datenerhebung, Vienna 1981; Wolf, Ergebnisse.

48 Bundesanstalt für Pflanzenbau und Samenprüfung, Jahrbuch der Bundesanstalt für Pflanzenbau und Samenprüfung, years 1979, 1980, 1981, Vienna 1980, 1981, 1982.

(Figure 3).⁴⁹ In 1974, Josef Staribacher (SPÖ), Federal Minister for Trade, Commerce, and Industry (BMHGI), initiated negotiations with representatives from the oil and fat processing industry in collaboration with the BMLF. In this context, two groups of actors came together: On the one hand, the multinational corporation Unilever was contemplating the establishment of an oil mill in Switzerland and expressed interest in procuring oilseeds from Austria. When the Swiss project failed, Staribacher attempted to promote Austria as an alternative location for the facility.⁵⁰ On the other hand, Heinrich Wohlmeyer, Director of the Austrian Agricultural Industry, advocated founding an Austrian consortium to establish an oil extraction plant.⁵¹ Eventually, a three-party consortium comprising the Austrian Agricultural Industry, the Austrian Consumer Cooperative, and the Eisenberg Group – an internationally operating company that was to construct the mill – was registered in 1977 under the name *Olioprot*.⁵² This consortium constituted the economic core of the so-called Oilseed Project or Oil Mill Project.

The project faced internal challenges and conflicts of interest, however. The relationship between Unilever and the Austrian consortium was initially characterized by a lack of trust and accusations by the latter that the former was only participating to impede Austrian developments. These differences led to the formulation of two project plans and the exchange of mutual statements. During a meeting, Staribacher presented his views on the matter: “I have not yet decided in favour of either project, but I am waiting to see who comes up with the better proposal. A certain amount of external protection will be necessary. [...] We need the oil extraction plant and that is my conviction.”⁵³ Apart from economic representatives, the involvement of workers’ representatives (Chamber of Labour, Austrian Federation of Trade Unions) in the project was important to the government.⁵⁴ At the end of 1977, the involved actors agreed to set up working groups. Their results served as a basis for further steps in the political decision-making process.⁵⁵ Details of the Oilseed Project were first presented to the public in 1977 at a special conference as well as in journal articles.⁵⁶

In April 1978, the federal government submitted a bill for a vegetable oil tax law (Pflanzenölabgabegesetz) to the National Assembly. It was based on the Swiss and Swedish market organizations for oilseeds and strove to create a framework for the cultivation and processing of oilseeds for vegetable oils and protein feed. The bill proposed a tax on all vegetable oils, fats, and residues (oilcake) produced in Austria or imported into Austria.⁵⁷ This policy move represented a second attempt to address the inadequate market protection for oilseeds in Austria and promote domestic oilseed production.

49 BOKU, Projektstudie für die Errichtung einer Ölsaatenverarbeitungsanlage in Österreich. Memorandum für die österreichische Bundesregierung, Vienna 1974, 6–12.

50 StBKA, Diaries, 28 November 1974, 23-1435–23-1436.

51 StBKA, Diaries, 30 September 1974, 22-1163.

52 Zentralblatt für die Eintragungen in das Handelsregister der Republik Österreich 76/20 (18 January 1977), 791.

53 StBKA, Diaries, 27 April 1977, 36-0477–36-0478.

54 StBKA, Diaries, 29 March 1977, 35-0367, 35-0369–35-0370.

55 ÖSTA, AdR, Bundesministerium für Handel, Gewerbe und Industrie (BMHGI), records of negotiations between Unilever and Olioprot, 14 November 1977, GZ 4315.18/29-IV/5a-77.

56 Hans Köttl, Die volkswirtschaftliche Rentabilität eines konkreten Projekts zur Erzeugung und Verarbeitung von Ölsaaten in Österreich, in: Agrarische Rundschau 4/5 (1977), 6–14.

57 ParA, Regierungsvorlage Pflanzenölabgabegesetz vom 22.5.1978. 907 der Beilagen zu den stenographischen Protokollen des Nationalrates XIV.GP, scanned original.

Opposition to the proposed law was immediate and intense. On the one hand, established Austrian companies trading in animal feed (especially soy cake) reacted, as domestic production and processing of oilseeds were seen as competition for the lucrative import business. On the other hand, US diplomacy sprang into action on behalf of American soybean farmers, processors, and agricultural traders. The US National Soybean Processors Association (NSPA) learned of the Austrian plan in the spring of 1978 and intervened with the US Secretary of Agriculture, Robert Bergland.⁵⁸ The US authorities considered the law a violation of existing agreements, including the one concluded after the 'action on oilcakes', and again enacted retaliatory measures.⁵⁹ This strong US reaction towards Austria can also be interpreted as an example of deterrence vis-à-vis the European Community (EC), which was much more important for US soy exports. However, another potential line of resistance to the Austrian proposal came from the EC itself (Germany was a major supplier of soy cake) as well as from the soy-producing countries of South America, especially Brazil.⁶⁰ This situation also led to broader media coverage of the Oilseed Project.⁶¹ A subcommittee of the parliamentary Finance Committee examined the bill and concluded that it should not be passed.⁶² Accordingly, the bill's GATT conformity was never resolved, since it was not pursued further following the US objection.⁶³

By the end of the 1970s, it became clear that the original idea of the Oilseed Project with a large oil extraction plant, protection against cheap imports, and promotion of oilseed cultivation was falling apart. Instead, Minister Staribacher urged gradual action: "We will now [...] build up soy production in Austria in small steps."⁶⁴ Initially, the idea was to slowly increase the area under oilseed cultivation at the expense of the fat industry without subsidies, and subsequently increase VAT on vegetable oils and fats from 8 to 18 per cent, using the generated funds to finance the cultivation of oilseeds.⁶⁵ In the end, neither financing option was implemented. The situation on the processing side changed as well: The *Olioprot* consortium began to fall apart in 1978 and was finally dissolved in 1980.⁶⁶ Unilever and other oil processing companies continued to play an important role, however. As buyers, they negotiated with the BMHGI as well as with farmer and worker interest groups on quantities, prices, and state support for oilseeds.⁶⁷ The Oilseed Project gave way to isolated meetings focusing on rapeseed as the central raw material for the oil and fat processing industry.

58 Sheldon J. Hauck, Protectionism in Trade – Expansion in oilseeds, in: Frederick Corbin (ed.), World Soybean Research Conference II: Proceedings, Boca Raton 1980, 801–806, 804–805.

59 StBKA, shelfmark VII.1, USA, box 16: Korrespondenz der US-Botschaft in Österreich (1978), letter no. 63, 21 June 1978.

60 ÖSTA, AdR, BMHGI, Information für den Bundesminister betreffend GATT, Ölsaatenprojekt, Zl. 27.629/48-II/7/78.

61 Soja in Österreich: Der zähe Kampf gegen den Wolf, in: Trend: Das österreichische Wirtschaftsmagazin, May 1981, 176–181; Agraraffäre: Das Sojawunder vom Marchfeld, in: Trend: Das österreichische Wirtschaftsmagazin, September 1978, 42–51; Als Abschreckung gedacht, in: Die Zeit, 1 December 1978, 21.

62 Nicholas M. Thuroczy, Austrian Parliament Lays Aside Plan to Boost Oilseed Output, in: Foreign Agriculture 16/40 (1978), 14–15.

63 Wolfgang Benedek, Handbuch zur österreichischen GATT-Praxis: Einführung zu den Artikeln des Gatt 1994. Die österreichische Praxis zum Gatt, Nationale und europäische Rechtsquellen, Vienna 1998, 36.

64 StBKA, Diaries, 11 December 1978, 45–1457.

65 StBKA, Diaries, 30 June 1978, 43-0765–43-0766; Geld für Ölsaatenprojekt, in: Kurier, 19 July 1980, 6.

66 Zentralblatt für die Eintragungen in das Handelsregister der Republik Österreich 80/17 (29 April 1981), 935.

67 StBKA, Diaries, 21 June 1981, 60-0772; 9 July 1981, 60-0875–60-0876.

At the same time, there were loud calls to continue the (large-scale) project. These came from the traditional agricultural sector as well as from provincial governments. For instance, the Deputy Governor of Lower Austria, Erwin Pröll (ÖVP), called for production alternatives in agriculture and forestry at a symposium on the subject: “The implementation of the Oilseed Project is a matter of state policy, just like the State Treaty [1955] was at the highest level. Austria’s permanent neutrality requires a secure supply in the event of a crisis.”⁶⁸ A parliamentary resolution also urged the social democratic federal government to continue its efforts in the oilseed sector.⁶⁹ This was partially achieved through the implementation of subsidies for the cultivation of rapeseed from 1981 and for broad beans and peas from 1982.⁷⁰

Reviewing the 1970s reveals a curious inconsistency. Despite concerted political and economic initiatives to reduce reliance on oil and protein feed imports, as exemplified by the Oilseed Project, the 1970s witnessed a surge in imports of soy oil and soy cake accompanied by a concomitant increase in dependency. The imports of soy oil increased from approximately 17,600 tonnes in 1970 to almost 43,000 tonnes in 1982, while soy cake imports quadrupled during the same period, reaching over 400,000 tonnes in 1982. Germany was the most significant exporter ahead of direct imports from the USA. However, Germany acted as an intermediary, importing soybeans and processing them into oil and oilcake which were then exported to other European countries. Italy, the Netherlands, Argentina, and Brazil were additional suppliers of soy cake (Figure 3).⁷¹ The consequence of the global protein crisis was a diversified trade, with the USA beginning to lose its unique position as an agro-food superpower. Austria attempted to increase local soy expertise and establish a domestic soy commodity chain, including the necessary regulatory framework. These efforts can be seen as a plan for a more nationally framed regime in the oilseed and protein sector. It did not result in a reduction in trade volume, however, and the Austrian attempt to secure more autonomy failed due to the still strong position of the USA in international regulatory institutions.

The soy food niche network (1980–1987)

In the early 1980s, a commodity-based niche network around soy emerged between economic and civil society actors. It built upon the previous rise of soy cake as animal feed and the handling of the crisis by a network composed of state, science, and enterprises. The absence of a larger processing plant for oilseeds (oil and protein feed) resulted in the establishment of two smaller areas of soy processing for food products in the 1980s: Firstly, grain mills sought new processing and marketing options, intending to diversify their activities away from the milling of wheat, which was subject to strict market regulations. The introduction of soy to this sector constituted a novel and innovative development. At least four mills in Upper and Lower Austria commenced soy milling operations during the 1980s. The initial purchasers

68 Ernst Scheiber (ed.), *Produktionsalternativen für die Land- und Forstwirtschaft in Niederösterreich*, Vienna 1981, 85.

69 ParA, Entschließung des Nationalrates vom 6. Oktober 1981 betreffend Verwirklichung des Ölsaatenprojektes, 65/E XV. GP, scanned original.

70 BMLF, *Grüner Bericht* 1989, 63–64.

71 Österreichisches statistisches Zentralamt, *Statistik, yearbooks 1970–1982*, Customs No. 150787, 150737, 150797, 1399/555, 2304.

of the soy flour and soy flakes produced there were primarily the food industry along with companies in the baking and confectionery industry (biscuits and wafers).⁷²

At first, imported soybeans were processed, but the increasing availability of soybeans from experimental soy cultivation forged links between Austrian farmers and processing companies. Anton Wolf, managing director and later chairman of *Sojaring* from 1982 onwards, facilitated cooperation between producers and processors. According to Wolf, in 1982, *Sojaring* farmers cultivated approximately 100 hectares, exported 20 tonnes of soybeans, marketed 15 tonnes to Austrian processing companies, and sold 12 tonnes directly from their farms.⁷³ A soy farmer recalls this period:

“We finally had success with the soybean. [...] We cleaned the soybeans at our place [...] and packed them in 25-kilo sacks. And that then went to various customers [...] that made soy milk or tofu. We delivered it there in small batches. And we got good money for it.”⁷⁴

This passage underlines the profitability of soy in conjunction with post-harvest processing on the farm. Furthermore, it reveals the second area of soy processing: the newly founded processing companies for alternative soy foods including tofu, tempeh, miso, and soy milk.⁷⁵ The first Austrian company to commence production of tofu and miso was established in 1980. Others emerged in the following years, and after several reorganizations and mergers, there were eventually three major tofu processing companies. Since the early 1980s, tempeh was also produced from soybeans in Austria. At the time, soy food products were distributed through specialized health food and organic food shops.⁷⁶ These sales enabled *Sojaring* to increase its cultivation area in the first half of the 1980s (Figure 4).

Nevertheless, this soy food network was not a standalone entity but instead connected with other actors in the agro-food sector. On the one hand, *Sojaring* received funds from government agencies for cultivation experiments between 1979 and 1985.⁷⁷ Yet the association complained about the inequitable treatment of soybeans given that the BMLF provided subsidies for rapeseed, broad beans, and grain peas as alternative arable crops. Conversely, soy was not only excluded from subsidies but also met with resistance from powerful agricultural lobbying organizations. This clash of interests became obvious in the context of frequent damage caused to soy fields by wildlife, which led to extensive discussions with hunting

72 Interview no. 6, segment 2 (male, soy mill), 14 September 2022.

73 ZVR, legal records of *Sojaring*; William Shurtleff/Akiko Aoyagi, *History of Soybeans and Soyfoods in Austria and the Austro-Hungarian Empire (1781–2020)*. Extensively Annotated Bibliography and Sourcebook, Lafayette, CA 2020, 654; *Sojaring*, 4. Aussendung an Mitglieder, Vienna, 1 March 1983, letter. As there is no official data on soy production in Austria from 1959 to 1986, this self-reported data serves as an initial estimate.

74 Interview no. 36, segment 4 (male, soy farmer), 7 February 2024.

75 Soy foods are soy-based products for direct human consumption, including tofu (soybean curd), tempeh (fermented soybeans), miso (fermented soybean paste), and soy milk (liquid extract of soybeans). These are protein-rich, plant-based foods consumed as meat or dairy substitutes.

76 Shurtleff/Aoyagi, *History*, 656, 665, 688.

77 BMLF, *Tätigkeitsbericht*, years 1973–1990; BMLF, *Grüner Bericht*, years 1991–1993; ÖSTA, AdR, GZ 26.006/03/82 (1981), GZ 26.006/04/82 (1982), GZ 26.006/24/84 and GZ 26.006/26/84 (1983), GZ 26.006/31/85 (1984).

organizations regarding compensation.⁷⁸ On the other hand, there were international connections. *Sojaring* procured soy seed directly from the USA and Canada, as conventional seed trade companies in Austria would not provide it. The cost of this procurement from abroad was an incentive for using farm-saved seeds. Furthermore, German processing companies purchased Austrian soybeans, and members of *Sojaring* interacted with agronomists around the world and applied US quality standards for soy cultivation for food.⁷⁹

In the second half of the 1980s, plant breeding and seed companies showed increasing interest in oil and protein crops. After more than a decade of (scientific) field trials and political discussions about the need for an Austrian oilseed and protein crop production, the engagement of commercial and cooperative breeders was a further step. International and Austrian experts discussed seed breeding for rapeseed, broad beans, sunflowers, and peas at a symposium at the sixth International Trade Fair for Seed (IFASA) in September 1985. Soybeans were not explicitly discussed, however.⁸⁰ Even at this time, they were still dismissed by established experts as a “small market niche” and not competitive with other oil and protein crops.⁸¹ On the one hand, this indicates that niche networks around soy had been established by the 1980s, with farmers gaining experience and some consumers deciding to opt for alternative food products. At the same time, however, cultivation of soy and its processing as a food were not considered worthwhile in the established agro-food sector.

The Soybean Campaign (1987–1995)

At the end of the 1980s, a significant shift in agricultural policy regarding soy cultivation became apparent. It represents an example of efficient state-led crisis management. In 1986, Erich Schmidt, the newly appointed Minister of Agriculture, increased the subsidies for oil and protein crops – but soybeans were still not included.⁸² One year later, following sixteen years of social democratic leadership, the Ministry of Agriculture was taken over by the conservative party (ÖVP) under Josef Riegler. The reduction of grain surpluses and the substitution of protein feed and vegetable oil imports, together with the greening of agriculture, became the central focus of eco-social agricultural policy.⁸³ The experiences of the previous decade and renewed consultations with the USA revealed that no trade policy measures were possible in the oilseed sector. This left the government with the exclusive option of providing subsidies from the state budget.⁸⁴

The subsidies were thus further increased – and finally also extended to soybeans and sunflowers – with the aim of facilitating a transition in agricultural production from cereals

78 *Sojaring*, 1. Aussendung an Mitglieder, Vienna, 20 January 1985, letter.

79 *Sojaring*, 3. Aussendung an Mitglieder, Vienna, 1 February 1983, letter; *Sojaring*, 4. Aussendung an Mitglieder, Vienna, 1 March 1983, letter.

80 Saatbau Linz, 6. Internationale Fachmesse für Saatgut (IFASA '85), in: *Inform: Zeitschrift für Pflanzenzüchtung und Saatgutproduktion* 2 (1985), 3.

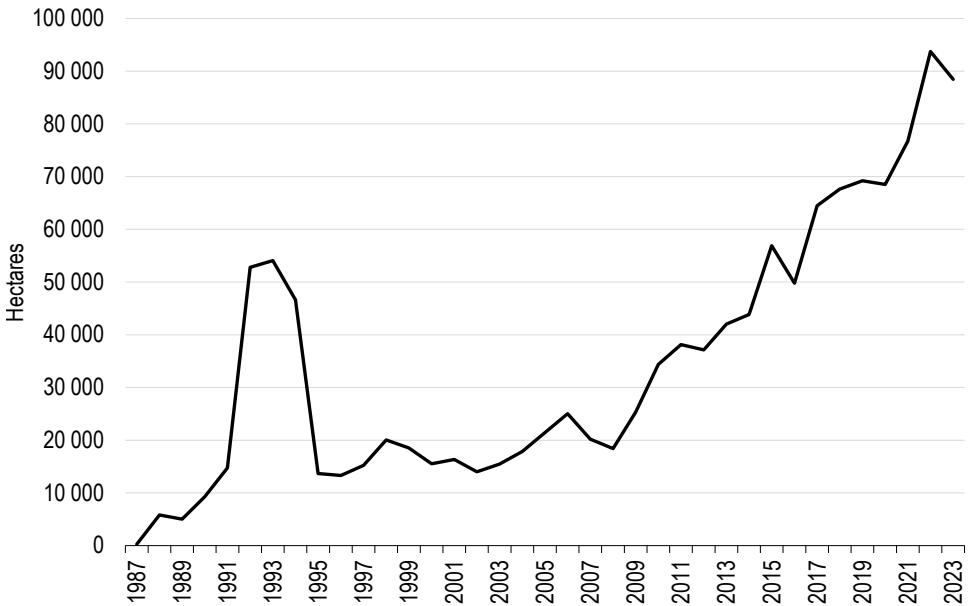
81 Dietrich Wolffhardt, Erfahrungen im Anbau von Öl- und Eiweißpflanzen in Österreich, in: *Inform: Zeitschrift für Pflanzenzüchtung und Saatgutproduktion* 2 (1985), 9–10, 9.

82 Ernst Bruckmüller/Wolfgang Werner, Raiffeisen in Österreich: Siegeszug einer Idee, St. Pölten 1998, 204.

83 Josef Riegler, Neugestaltung der österreichischen Agrarpolitik, in: *Der Förderungsdienst* 35/4 (1987), 90–91.

84 Tausch, Alternativen, 194.

Figure 5: Soybean cultivation in Austria, 1987–2023



Sources: BMLF, Grüner Bericht 1989, 64; Statistik Austria, Statcube, years 1990–2023, Feldfruchtproduktion, Sojabohnen. Compiled by the author.

to alternative arable crops. This was due to high federal expenditure for supporting grain exports, one-sided crop production, and the dependency on protein feed imports.⁸⁵ The state subsidy system for soy between 1988 and 1994 (referred to as the ‘Soybean Campaign’) comprised an area bonus and a product bonus (a guaranteed purchase price).⁸⁶ The LWK were responsible for issuing authorization certificates to farmers. To qualify for the subsidy, farmers were required to reduce their area devoted to grain and grain maize by the amount of land on which they cultivated subsidized soy. Furthermore, it became mandatory to purchase original seeds from a selection of authorized varieties. In essence, the subsidy scheme can be characterized as contract farming, since farmers were required to arrange a cultivation and supply contract with purchasers.⁸⁷ In effect, the Soybean Campaign supported the cultivation of soybeans with favourable contribution margins, promoting the position of soy in comparison to other arable crops. This state support led to an expansion of soy cultivation. In 1987, for the first time since the postwar period, the BMLF designated soy as a specific crop with a total growing area of 250 hectares. During the campaign, soy reached its peak in 1993 with cultivation on over 50,000 hectares (Figure 5). The associated financial outlay amounted to

85 Oliver Auer, *Land der Bohne? Über das soziale System und die kulturellen Praktiken hinter der österreichischen Körnerleguminosenproduktion*, master thesis, University of Klagenfurt 2015.

86 BMLF, *Grüner Bericht*, 1994, 122.

87 Niederösterreichisches Landesarchiv (NÖLA), Bezirksbauernkammern, BBK Baden, box 65: NÖ Landes-Landwirtschaftskammer Schreiben bezüglich Sojabohnen – Anbauaktion 1988, 10 March 1988, administrative record.

approximately 186 million euros.⁸⁸ Nevertheless, it resulted in a reduction in expenditure for the support of grain sales.⁸⁹

The incorporation of soy into the state subsidy programme led to a resurgence in research activity. In 1987, the LWK resumed large-scale cultivation trials with state support (Figure 4). Furthermore, state-funded scientific research was conducted in conjunction with the cultivation of soybeans, encompassing areas such as soybean breeding, irrigation techniques for soybeans, agrometeorological concerns, and potential applications for animal feed.⁹⁰ The largest research project was a soybean breeding programme at BOKU.⁹¹ Between 1987 and 1992, cross-breeding trials were conducted and approximately 100 soy varieties tested at thirteen locations in collaboration with LWK, technical colleges, and breeding companies.⁹² Additionally, breeding companies had commenced the introduction of novel soybean varieties to Austria for evaluation purposes. At this time, two cooperative companies dominated the soybean seed market: *Raiffeisen Ware Austria* (RWA) with its subsidiary *Saatzucht Gleisdorf*, and *Saatbau Linz*. Soy cultivation in Austria was contingent upon the availability of suitable early-maturing varieties. The expansion of acreage went hand in hand with an increase in the number of available varieties: While Austrian farmers had previously been limited to five soybean varieties imported from Canada and the USA, the market expanded to encompass 25 varieties by 1994.⁹³

The eco-social shift of agricultural policy impacted other established players in the agro-food sector as well. Despite the absence of external protection for oilseeds, the increased state support for the cultivation of oil and protein crops was a strong economic incentive to invest in the processing sector. Support for a new oil mill project came from the *Raiffeisen* co-operatives, the LWK, and other economic actors such as agricultural trading companies. In 1989, an oil mill commenced operations, with a producers' cooperative assuming responsibility for supplying approximately 50,000 tonnes of oilseeds. The establishment of the oil mill contributed to reducing Austria's reliance on imported vegetable oils.⁹⁴ However, the project once again excluded soy, with the mill designed exclusively for processing rape and sunflower

88 Author's calculation based on: BMLF, Grüner Bericht, years 1989–1994. Exchange rate: 1 euro = 13.7603 schilling.

89 Rechnungshof, Nachtrag zum Tätigkeitsbericht des Rechnungshofes: Verwaltungsjahr 1994. Produktionsumlenkende Förderungsmaßnahmen zur Einschränkung des Getreideanbaus, Vienna 1994.

90 H. Supersperg/Peter Cepuder/Andreas Klik, Abschlußbericht: Beregnung von Sojabohnen, Forschungsprojekt L 561/89, Vienna 1991; Walter Schneeberger/Rudolf Leitgeb/Emmerich Berghofer, Endbericht zum Projekt ND 45. Kosten-Nutzen-Analyse der verschiedenen Verwertungsmöglichkeiten für Sojabohnen im Futtermittelbereich, Vienna 1991; Ralph Gretzmacher, Endbericht über das Projekt Nr. 474: Aufbau einer österreichischen Sojabohnenzüchtung und Erarbeitung optimaler pflanzenbaulicher Maßnahmen, Vienna 1991; Inge Dirmhirn et al., Endbericht für das Projekt Nr. L 569/89: Agrarmeteorologische Untersuchungen an Mais, Sojabohne und Pferdebohne, Vienna 1992.

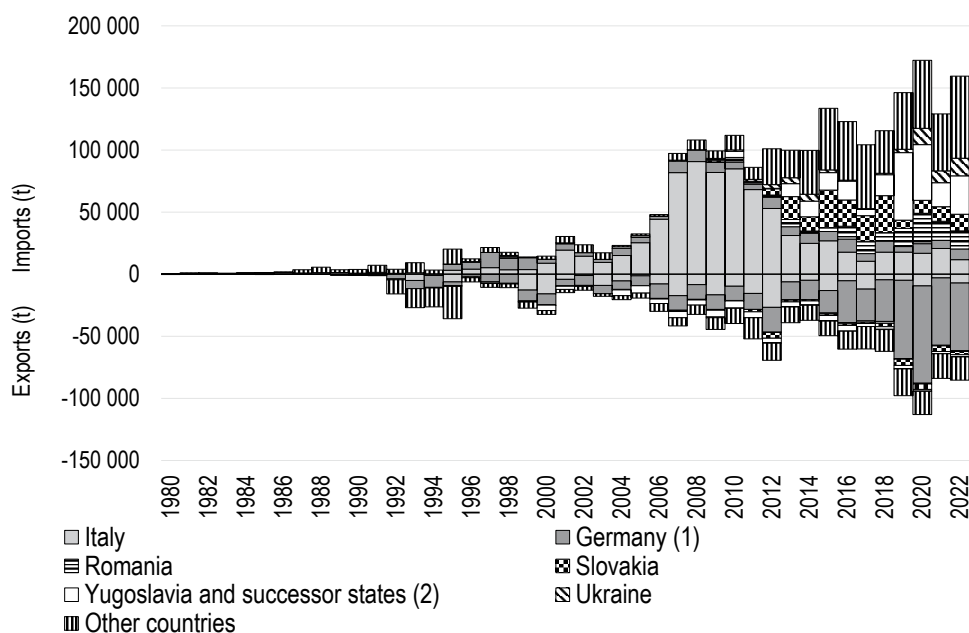
91 ParA, Bericht des Bundesministeriums für Wissenschaft und Forschung über die Forschungsförderungen 1990, III-30 der Beilagen XVIII. GP, report.

92 Gretzmacher, Endbericht; Ralph Gretzmacher, Abschlußbericht über das Forschungsprojekt Nr. L 719/92: Weiterführung einer österreichischen Sojabohnenzüchtung und der begleitenden produktionstechnischen Untersuchungen, Vienna 1992.

93 Kundmachung des Sortenverzeichnis und Zuchtbuchs, in: Amtsblatt zur Wiener Zeitung, 10 February 1994, 14–15.

94 Stefan Pinterits, Markt für pflanzliche Öle und Fette, in: Günter Breuer et al. (eds.), *Agrarvermarktung in Österreich: Von der Marktordnung zum Marketing*, Vienna 1991, 333–337, 334–335; Bruckmüller/Werner,

Figure 6: Soybean trade in Austria, 1980–2022



Sources: Österreichisches statistisches Zentralamt, Statistik, yearbooks 1980–1994, Customs No. 120120, 12010010, 12010090; Statistik Austria, Statcube, years 1995–2022, Combined Nomenclature: 12010010, 12010090. Compiled by the author.

(1) Until 1991: only West Germany, no trade with East Germany; (2) Since 1991/92: Bosnia and Herzegovina, Kosovo, Croatia, North Macedonia, Serbia, Montenegro, Slovenia.

seeds. This may have been due to the relatively new and still unstable soy cultivation sector and the additional equipment that would have been required.⁹⁵

Processing of the Austrian soy harvest therefore still had to occur via alternative routes. On the one hand, soy was processed in large quantities by compound feed mills in full-fat form for animal feed.⁹⁶ The requisite pre-treatment (degradation of trypsin inhibitors) resulted in the establishment of processing facilities capable of thermally treating (toasting) soybeans.⁹⁷ Meanwhile, the transition to domestically produced animal feed was facilitated by the support of traditional agricultural cooperatives such as *Raiffeisen*.⁹⁸ Conversely, a minor proportion of the soybean yield was absorbed by food processing companies for soy-based

Raiffeisen, 204; Commission of the European Communities, Regulation (EEC) No. 4064/89: Merger Procedure. Case No IV/M.866 – CEREOL/ÖSAT-Ölmühle, Luxembourg 1997; BMLF, Grüner Bericht 1989, 63.

95 Walter Schneeberger/Franz Raab, Sektorplan-Grundlagen für Getreide, Ölsaaten und Hülsenfrüchte, Saat- und Pflanzgut, Stärke und Alkohol, Vienna 1993, 61.

96 Walter Schneeberger/Rudolf Leitgeb/Emmerich Berghofer, Einsatz von Sojabohnen im Futtermittelbereich: Kosten-Nutzen-Analyse der verschiedenen Verwertungsmöglichkeiten, in: Der Förderungsdienst 40/8 (1992), 53–60, 53.

97 Interview no. 28/2, segment 10-26 (male, agricultural trading company), 16 November 2023.

98 Bruckmüller/Werner, Raiffeisen, 312.

mill products and alternative foods, as previously outlined. A limited quantity was also utilized in specialized facilities for soy oil and exported.⁹⁹ In 1993, soybean exports amounted to approximately 27,000 tonnes (Figure 6). In summary, the incorporation of soy into the subsidized alternatives scheme resulted in an expansion of the production network, with an increase in the number of soy farmers and the emergence of new sectors including animal feed production and seed breeding. Austrian soybeans, formerly a niche product, became more and more incorporated into the established agro-food sector, indicating a nationally framed (sub-)regime. However, soy cake imports were still the main source of protein for animal feed (Figure 3), highlighting Austria's continued dependence on a global – though no longer solely US-centred – food regime.

Flexible beans: Austrian soy between WTO- and EU-centred regimes (1995–2020)

From the mid-1990s onwards, the Austrian-centred commodity network around soy was stabilized by the European integration. Simultaneously with the first soy boom, Austrian politicians decided to set a course for EU accession in response to increasing international competition in the context of the GATT's Uruguay Round. Austria applied for membership in 1989, accession negotiations began in 1993, and the country became a member of the EU in January 1995. The accession process marked a pivotal moment for the agricultural sector given the necessary adaptations to the notable discrepancies in pricing and quality within the framework of the EU's Common Agricultural Policy (CAP). Concerning agricultural subsidies, Austria managed to ensure degressive payments to producers for a transitional period of four years. Furthermore, the possibility of an agro-environmental policy within the context of the CAP was established. This was subsequently implemented in the Austrian agro-environmental programme ÖPUL.¹⁰⁰ Moreover, international treaties signed by the EU also became binding for Austria. These included the Blair House Agreement concluded between the EU and the USA in 1992 to settle the oilseeds dispute. It stipulated that the EU was permitted to promote a maximum of 5,128,000 hectares of oilseeds, with Austria assigned a maximum of 147,000 hectares.¹⁰¹ The agreement enabled the conclusion of the GATT Uruguay Round and thus the transition to the World Trade Organization (WTO) in 1995.¹⁰² This suggests that the USA retained a dominant position in the European oilseed market even during the 1990s, with Austria being further integrated into transnational agro-food commodity chains.

99 Schneeberger/Raab, Sektorplan, 5, 56, 65.

100 Andrá Rupprechter, Agrar- und Agrarstrukturpolitik, in: Waldemar Hummer/Walter Obwexer (eds.), 10 Jahre EU-Mitgliedschaft Österreichs: Bilanz und Ausblick, Vienna 2006, 455–460, 455–456; Schneeberger/Raab, Sektorplan, 18; BMLF, Jahresbericht 1993, 57–60; BMLF, Jahresbericht 1994, 73–80.

101 Austria never reached this level. See ParA, Beantwortung der schriftlichen parlamentarischen Anfrage betreffend Auswirkungen des "Blair House Agreement", 2290/J, 10 November 2004, scanned original.

102 Glenn Ames/Lewell Gunter/Claudia Davis, Analysis of USA-European Community Oilseeds Agreements, in: *Agricultural Economics* 15/2 (1996), 97–112, 100–101; Michael T. Herlihy/Joseph W. Glauber/James G. Vertrees, U.S.–EC Blair House Agreement, in: *International Agriculture and Trade Reports Europe: Situation and Outlook Series/RS-93-5* (1993), 45–52, 49.

Austria's EU accession resulted in a reduction of the high state subsidies for soy cultivation, which subsequently led to a significant decline in harvested area. Until the 2000s, the area under soy cultivation ranged between 13,000 and 25,000 hectares (Figure 5). Nevertheless, the continuation of direct payments was a factor that contributed to the persistence of soy cultivation. Soy was subsidized with an area compensation as an oilseed in the so-called Crop Compensation Scheme (1995–2005), which also included rapeseed and sunflowers.¹⁰³ Starting in 2000, the level of support for oilseeds decreased continuously. The ÖPUL also created an indirect incentive to cultivate oil and protein crops from 1995 onwards. This was achieved by promoting crop rotation as part of the incentives for eco-friendly farming. The soybean, which acts as a nitrogen collector in symbiosis with bacteria, benefited from this measure in the long term.¹⁰⁴

In addition to these institutional changes, public discourses affected the role of soy in the agro-food domain from the 1990s onwards. The socio-ecological discourse centred on organic farming versus genetically modified organisms (GMOs) in agriculture generated distinct public notions of 'good soy' versus 'bad soy'. The debate about GMOs began relatively late in Austria when the harmonization of the EU's legal system culminated in the Austrian Genetic Engineering Act of 1995. A significant and emotional debate commenced in 1996, coinciding with the prospective release of genetically modified potato and maize plants. Genetic engineering was perceived as a potential threat by many consumers, especially those from the middle classes with higher income and education. A heterogeneous coalition from different areas of society (organic farmers' associations, food traders, environmental NGOs), supported by certain mass media, emerged. Due to this civil society resistance, experimental cultivation of GMOs never started in Austria. In 1997, a referendum calling for the prohibition of genetic engineering in food, agriculture, and patents was initiated. The petition was signed by over 20 per cent of the Austrian electorate. The demands were gradually incorporated into the Austrian and EU regulatory framework through revised authorization procedures for the release of GMOs and food labelling. In Austria, opponents of genetic engineering joined forces in the platform *ARGE Gentechnik-frei* (GM-free) and established the label *Gentechnik-frei hergestellt* (produced without GMOs).¹⁰⁵

The use of soy as food and feed has been a key issue in the debate on GMOs, resulting in a gradual restructuring of the established commodity network. The broad rejection of GMOs in Austria on the demand side was perceived by companies in agricultural trade, animal husbandry, processing, and retail as an incentive to supply GM-free products. This led to two significant changes: Firstly, a new commodity chain for GM-free soy emerged alongside the well-established imports of North and South American GM soy (Figure 3, Figure 6).¹⁰⁶ Secondly, the controversial debate around GMOs promoted the value of GM-free soybeans cultivated in Austria. According to a representative of a compound feed company, the GMO issue "then [...] improved a bit the competitiveness of our GM-free soy, GM-free soy by

103 BMLF, Grüner Bericht 1995, 148.

104 Auer, Land, 73.

105 Petra Grabner/Helge Torgersen, *Gentechnik in Österreich: Technikkritik versus Modernisierung*, in: Christine Wächter et al. (eds.), *Technik gestalten: Interdisziplinäre Beiträge zu Technikforschung und Technologiepolitik*, Munich 1998, 209–223, 215–217; Franz Seifert, *Demokratiethoretische Überlegungen zum österreichischen Gentechnik-Konflikt*, in: *SWS-Rundschau* 43/1 (2003), 106–128, 108–109 and 120–121.

106 "Da läuft generell etwas falsch:" Interview mit Karl und Andreas Pilstl, in: *Schweineprofi*, n.d., 11–12.

nature, right. So, there was a price difference [...], and then it became more valuable.”¹⁰⁷ As a reaction to the end of direct subsidies, soy cultivation initially declined. Starting in 2009, however, a combination of factors including the upvaluation of GM-free soy in the value chain led to a steady increase in soy cultivation until recently (Figure 5).

A further alternative to genetic engineering besides GM-free soy was organic soy. Representatives of organic farming successfully positioned organic (and therefore also GM-free) products as an even better alternative to GMOs.¹⁰⁸ Exploiting this market opportunity, a group of entrepreneurs comprising food processors, breeders, and farmers founded the *Soja aus Österreich* (Soy from Austria) association in 2008 with the aim of raising awareness of soy as a sustainable foodstuff and promoting GM-free and organic soy cultivation in Austria.¹⁰⁹ This civil society initiative was in part a continuation of the now-defunct *Sojaring*. In particular, several *Sojaring* farmers joined the new association, and their focus on soy food remained a priority. Food processing companies played a more important role, however.¹¹⁰ The soy commodity network was reinforced and expanded around this association, including scientific soy research at BOKU, commercial breeding with a specific focus on varieties for soy food, plant cultivation advice, soy farmers, specialized agricultural trade, large-scale soy food processing (tofu, soymilk, soy flour, soy snacks) and retail (private labels and special brands). A central element highly valued by discerning consumers was the organic and regional origin of soybeans. With the growing trend towards plant-based diets, the importance of soy in human nutrition has increased, resulting in a wide range of organic and conventional soy food products and soy derivatives (for example, lecithin and isoflavones) available to food processors, restaurants, and consumers.¹¹¹ As a consequence – and in contrast to most other countries – approximately one-third of the soybean harvest in Austria is organic.¹¹²

Another key feature of soy’s commodity network is its transnational connectedness. Austria’s integration into the Single European Market has resulted in intensified competition and significant adaptations in specific sectors, for example dairies and mills. However, EU integration has also presented opportunities for Austrian companies to sell their products abroad.¹¹³ In this market integration, the distinguishing feature of GM-free soy was essential, as it facilitated the competitiveness of Austrian companies with suppliers of GM soy and thus

107 Interview no. 22, segment 28 (male, compound feed company), 19 October 2023.

108 Josef Hoppichler, *Biolandbau und Gentechnik: Von der Unmöglichkeit eines Nebeneinander*, in: Michael Groier/Markus Schermer (eds.), *Bio-Landbau in Österreich im internationalen Kontext: Zwischen Professionalisierung und Konventionalisierung*, Vienna 2005, 139–154, 140; Helge Torgersen, *Austria and the Transatlantic Agricultural Biotechnology Divide*, in: *Science Communication* 24/2 (2002), 173–183, 180.

109 Matthias Krön, *Produktion und Vermarktung von Soja-Lebensmitteln in Österreich*, in: Verein Soja aus Österreich (ed.), *Tagungsband: 1. Österreichisches Soja-Symposium. 135 Jahre Sojabohne und Sojaforschung*, Vienna 2008, 11–13.

110 Interview no. 31, segment 4-19 (male, NGO), 30 November 2023.

111 Angela Mörixbauer/Elisabeth Fischer, *Projektbericht: Marktübersicht gastronomiegeeigneter verfügbarer Sojaprodukte aus der Region*, Vienna 2019.

112 2023 bisher größte Sojaernte in Österreich, in: Austria Presse Agentur, *Originaltext-Service (APA-OTS)*, 5 December 2023.

113 Josef Hoppichler, *Was brachte der EU-Beitritt der österreichischen Landwirtschaft?*, Vienna 2007; Matthias Schneider, *Österreichs Landwirtschaft unter EU-Bedingungen*, in: *WIFO Monatsberichte* 3 (1997), 155–170, 160.

generated added value. This includes soy products like soy milk, tofu, soy snacks, soy seeds, and soy mill products.

In contrast to soy cake, which is mainly imported, Austrian soy mill products are export products. Since 1995, soy flour exports and trade links have been increasing, peaking at around 16,800 tonnes in 2014. Initially, Austria exported soy flour primarily to European countries, but over the past decade there has been a notable shift towards non-European regions such as North Africa and the Middle East. For instance, approximately one-sixth of the export volume was directed to non-European countries in 2019. By contrast, imports only played a significant role between 2000 and 2007.¹¹⁴ These developments highlight the steadily growing importance of Austrian soy in the agro-food sector after its downturn in the mid-1990s, complemented by key export links to the EU and beyond.

A transnational linkage similar to soy flour has emerged in the domain of soy seeds. While Austria depended on foreign soy varieties for a long time, a coexistence of foreign and domestic varieties has emerged over the last fifteen years. Austrian soy breeding achieved national approvals for early-maturing, food-grade soy varieties in 2015. With these domestic varieties, Austrian breeders not only transformed the domestic soy seed market but also expanded their supply chains in the international GM-free seed market. In 2020, around 30 per cent of registered soy varieties in Austria were from domestic breeding.¹¹⁵ Saat-zucht Donau, a major Austrian breeding company, registered 74 soy varieties in fourteen foreign countries within seven years.¹¹⁶ A representative of the company mentions a “relatively large geographical radius of action. So, the easternmost cultivation area of our varieties is in the very east of Russia [...] and the westernmost distribution is in the Toronto area.”¹¹⁷ The commercial success of companies stabilized the domestic connections between interest groups, producers, and processors in the soy commodity network.

In the 2010s, the network around Austrian soy underwent expansion in two directions: Central and Eastern Europe as well as the livestock complex. In 2012, members of the *Soja aus Österreich* organization founded the association *Donau Soja* (Danube Soy – DS). In contrast to the former, the latter identifies as an international non-governmental organization (NGO) representing the entire soy value chain in Europe. DS asserts that Europe’s dependence on soy imports from socio-ecologically problematic extraction in South and North America represents a sustainability issue. The DS initiative therefore promotes a more sustainable, GM-free and purely European supply chain of plant protein as human food and animal feed, referred to as the ‘protein transition’. To this end, it propagates the expansion of soy cultivation and other protein crops in Central and Eastern Europe. DS established the labels *Donau Soja* and *Europe Soja* to guarantee consumers assured origin, production without GMOs, glyphosate, and deforestation, and fair labour standards. Certification charges in addition to membership fees and public funding are the crucial financial sources for DS.¹¹⁸ The number of

114 Statistik Austria, Statcube, years 1995–2022, Combined Nomenclature: 120810.

115 Bundesamt für Ernährungssicherheit, Österreichische Sortenliste 2023, Vienna.

116 Saat-zucht Donau, Sortenzulassungen, <https://www.saat-zucht-donau.at/sorten/> (10 September 2024).

117 Interview no. 14, segment 45 (male, breeding company), 4 May 2023.

118 Donau Soja Association, Donau Soja 10 Years Anniversary & Annual Report 2022, https://www.donausoja.org/wp-content/uploads/2022/09/DonauSoja_AnniversaryReport2022-1.pdf (30 August 2024); Matthias Krön/Ursula Bittner, Danube Soya: Improving European GM-free Soya Supply for Food and Feed, in: OCL-Oilseeds and Fats, Crops and Lipids 22/5 (2015), 1–10.

members increased from 34 in 2012 (mainly from Austria, Switzerland, and Germany) to over 200 from nearly 30 European countries by 2020. The list of members includes agrobusiness companies, lobbying and research organizations, farmers' associations, agricultural traders, food and feed processors, and retailers.¹¹⁹ The DS association and its transnational activities signify the emergence of a soy commodity network with an ambivalent character: On the one hand, it represents a European and sustainable counterweight to the dominance of American soy-exporting countries and transnational agrobusiness in agro-food globalization; on the other hand, it also adopts parts of the expansionist and agro-industrial agenda and includes traditional national and global actors.

As *Donau Soja* was founded, the first extraction plant for soy oil commenced operations in Austria. It processes soybeans originating from Austria and its neighbouring countries according to the DS standard, with most of the oil sold to the domestic biodiesel industry. The remaining soy cake is sold to the feed industry in Austria and abroad.¹²⁰ While these activities have only slightly reduced the import volumes of soy cake, the share of soy in oilcake imports has dropped significantly from around 90 per cent in 2010 to 67 per cent in 2020 due to the increase in rapeseed and sunflower oilcakes (Figure 2). Furthermore, the countries of origin for soy cake and soybeans have diversified, with soy cake now also being imported from Eastern Europe (Poland, Serbia, Hungary, Ukraine, and Romania). Similarly, soybeans are imported from Eastern Europe for further processing (Figure 3, Figure 6). Austrian soybeans are also exported to Germany due to the shift of Archer Daniels Midland's oil mills in Straubing and Mainz to GM-free soy.¹²¹ This strategy illustrates that key players in the global agrobusiness respond to European developments by diversifying their value chains in both the GM and GM-free sectors.

By the 2020s, the soy commodity web in Austria was significantly diversified. The joint efforts of anti-GM activists and GM-free marketing had reinforced a distinction in the public discourse on soy: Whereas imported products were perceived as 'bad' soy (i.e., genetically modified, industrialized, and foreign), Austrian soybeans were viewed as 'good' soy (GM-free, organic, and regional). Currently, imported soy – grown almost entirely from GM seeds – continues to play a role as 'food from nowhere', while GM-free conventional and organic soy is represented in product marketing as 'food from somewhere' for human consumption and animal feed.¹²² The fact that both notions of soy exist side by side demonstrates that elements of the previous US-centred regime continue to exist even though new elements have been introduced by overlapping WTO- and EU-centred regimes. The Austrian position in the global food regime has shifted from that of a strongly dependent importer of transatlantic soy to that of a producer and exporter of domestic soy in the European common market with increased – though still limited – autonomy.

119 Author's calculation based on: Donau Soja Association, List of members 2024.

120 Interview no. 21, segment 43-59 (male, soy oil mill), 16 October 2023.

121 Ölmühle Mainz: Verarbeitung von GVO-freiem Soja, in: agrarzeitung, 8 April 2022.

122 Hugh Campbell, Breaking New Ground in Food Regime Theory: Corporate Environmentalism, Ecological Feedbacks and the 'Food from Somewhere' Regime?, in: Agriculture and Human Values 26/4 (2009), 309–319.

Conclusion

This article highlights agro-food change through the lens of soy in the age of globalization. It concentrates on national developments and their transnational connections in the establishment of soy as an arable crop, feed, and food in Austria between around 1950 and 2020. Austria is now an important soy producer and exporter within the EU. It is the second largest producer of soy in relation to arable land after Croatia, and the fifth largest producer in absolute terms behind Italy, France, Romania, and Croatia.¹²³ The long and challenging journey of soy in Austrian agriculture comprises three partly overlapping periods: *hidden beans* (1948–73), *contested beans* (1973–95), and *flexible beans* (1995–2020). In the first period, Austria dealt with political and economic reconstruction after the Second World War by boosting food supply and agricultural self-sufficiency. Soy cake imports from overseas for livestock production facilitated agricultural intensification, supplying the increasing consumption of meat and dairy products. Through these commodity flows and associated institutions, Austria became integrated in the US-centred food regime. By the 1960s, the country transitioned from food scarcity to agricultural surpluses, while its dependence on vegetable oil and protein imports persisted. The 1973 global protein crisis marked the beginning of a second period characterized by state- and business-initiated efforts to reduce dependence on feed imports, representing a move towards a more nationally framed food regime. However, US pressure forced the Austrian government to abandon its plans for strengthening food autonomy. Despite this failure, a commodity-based network around soy food emerged and successfully established a vegetarian niche within the ‘meatified’ regime. During the third period, which was shaped by Austria’s accession to the EU, the niche network relating to soy expanded and benefited from both material and symbolic diversification between conventional (mostly GM) and organic (GM-free) soy. In the context of the high-productivist WTO-centred regime, the EU regulations opened up room for manoeuvre for ‘post-productivist’ activities such as organic agriculture and regional food. Within the WTO- and EU-centred regimes, Austria’s position shifted from that of a pure (and therefore dependent) feed importer to an importer, producer, and exporter of diverse products with more (albeit still limited) autonomy.

The actors involved in the emerging soy commodity web in Austria dealt with various driving and impeding forces. Most important for the integration of soy into the Austrian agro-food sector were the connections between initiatives by economic actors and civil society organizations on the one hand and state policies on the other. For instance, state regulation and support promoted the establishment of a network for soy cake and oil in the first period and enabled the soy food network in the second and third periods. This development was not linear, however, but rather a step-by-step journey of trial and error to explore a suitable path. A further facilitating factor was the connection between soy and nutritional changes in large segments of Austrian society. Soy played a dual role in human nutrition: On the one hand, processed soy provided the ingredients for the meatification and oilification of the Western diet in the postwar decades. On the other hand, unprocessed soybeans emerged as a “whole food” for a more plant-based diet representing an alternative to animal-based food.¹²⁴ These

123 Author’s calculation based on: Eurostat, *apro_cpsh1*: arable land (ARA), soya (I1130), year 2019.

124 Ernst Langthaler, *The Soy Paradox: The Western Nutrition Transition Revisited, 1950–2010*, in: *Global Environment* 11/1 (2018), 79–104, 102–103.

opposing, yet interlinked nutritional patterns initially formed different commodity networks: transnationally embedded soy cake flows and more nationally framed soy food networks. While these networks have largely converged over time, their driving forces have remained powerful. The emergence of soy in Austria was driven not only by demand but also by supply due to its material and symbolic features. In both organic and conventional farming, soybeans were a means of expanding crop rotation, thereby diversifying and ecologizing one-sided agro-ecosystems. The discursive association of GM soy with unsustainable agro-extractivism in the Americas worsened its public image in Austria. In the long term, the soy commodity network benefitted from the distinction between 'good' and 'bad' soy.

Besides these driving forces, Austrian soy also faced obstacles and restraints. Most importantly, institutional barriers inhibited the emergence of a competitive Austrian-based soy network for some time. During the first and the beginning of the second period, US producer and trader interests institutionalized in the food regime played a central role in maintaining the status quo. During the third period, Austria's EU integration enabled more leeway in the institutional framework for the Austrian soy network. In addition to institutional barriers, soy's biological properties such as its dependence on day length posed challenges as well. Soy cultivation demanded specialized knowledge and practices, and its processing required adequate equipment and technical expertise – and in the culinary realm, it competed with traditional dishes. Nevertheless, the driving forces gradually overcame these impeding factors.

Although this article has an empirical ambition with a limited temporal and spatial focus, its findings also contribute to temporal and spatial aspects of food regime theory. Firstly, it contributes to the periodization of food regimes by emphasizing the periods of crisis and transition. The Austrian case shows that the transition between the US-centred regime and its successor regime extended over a relatively long period from the 1970s to the 1990s. It can be argued that such periods of crisis and transition are at least equally crucial for food regime analysis as the more stable regime periods. Although the periodization of food regimes can build on single moments such as the 1973 protein crisis, it must also take into account the gradual overlaps of elements of previous and subsequent regimes – be they regulatory institutions, commodity networks, or socio-technical innovations. Secondly, the Austrian case highlights the need to reassess food regimes in a multiscalar perspective. The integration of a national agro-food sector into a global food regime is always only partial, leaving room for national, regional, and even local agency in organizing agriculture and food. Therefore, describing the successor of the US-centred regime as a 'WTO-centred' and 'corporate' regime does not adequately reflect the multiscalar diversity. The EU's Common Agricultural Policy as well as (sub-)national agro-food policies, commercial projects, and social movements add complexity to the simplistic notion of a uniform global regime. Country-focused case studies may provide a fruitful approach to analysing agro-food change adequately with a view to the multiplicity of time and space.